Notebook, N-07-05-04

This notebook was used by Edison in May 1907. It contains notes regarding experiments with an aluminum electrolytic rectifier, a device used to transform alternating into direct current and used in recharging exhausted storage batteries. Inserted into the book are several loose pages of notes relating to the rectifier work. The pages are unnumbered. Only 3 pages have been used.

May 4 1907

Aluminium Rectifier experiments

Test following solutions in Rectifier
make them when possible 15% strong
or less according to solubility.
Test efficiency - Capacity - Heat,
amperes for inch Etc -

Aluminates of Na K + Li NH4
Phosphates of Na K Li NH4
Borates Na K Li NH4
Chromate Na K Li NH4 Mg Sr
Calcium Potassium Chromate,
Cerious Bichromate, Cupric Bichromate
Ferric Bichromate, Magnesium Potassium Chromate
Manganous Potassium Chromate Bichromate Potassium
Potassium Sodium Chromate, Sodium Bichromate
Strontium Bichromate,
Ferrocyanide of Potassium Ferrocyanide
Sodium - do - Lithium - do NH4
Ferricyanides of Na K Li NH4 -
Ca Sr Ba

Permanganates
K Li Na Sb Ba Pb Cd Ca Ce
Fe Co Cu Mg Ni Hg Sr Ur
W Zn Sn
ditto Carbonates, that are soluble -
ditto Perchlorates of the above metals
ditto Chlorates "
ditto Tetramolybdates
ditto Nitrates
ditto Trichloroacetates
ditto Peroxphates,
" Phosphotungstates
" Sulphocyanides
" Sulphates
" Sulphites
" Metatungstates.
" Vanadates -
Fluorides of K Na Li Sn.
Cyanide K Na Li.
Molybdates K Na Li
Cuprocyanide of Potassium,
Arsenates K Na Li NH_4
Arsenites K Na Li NH_4
Phosphites K Na Li NH_4
K Alum - Sulphate Aluminum -
Ammonia Alum -
Hyposulphite K Na Li NH_4 Cs Ba

See Conays Dictionary of Solubilities

Try all the well known & most easily soluable salts first,

Test maximum usefulness each sol with permit of a healing effect,

[ITEM FOUND IN BOOK]

1 Try Nickel strip ~~immersed~~ in Carbon with Bicarb Soda & acid phos

2 Try Vanadate Soda — also Vanadate Potassa

3 Carbonate Ammonia & ~~Ammonia~~ Salt with Copper

4 Salts, Salt with Nickel

5 Try 3 of best Solutions together & [illegible] KHCO3 NaHPO4

6 Have John Ott assemble in battery jar under [illegible] No E 18, 18 plates 9 of carbon & 9 of Nickel — If you find the nickel works & test heat of the cell over several hours carbon 40 amps in parallel

[ITEM FOUND IN BOOK]

HCl
HBr
HI
HNO_3
H_2CrO_4
H_2SO_4
Iron
Mercury & Mercurous
Oxide
Sulphur
Other
Arsenious
Arsenic
Antimony
Bismuth
Oxygen sulphone
Sulphuric Nitric Metaphosphoric
H_2S
Hydrosulphuric
Sulphurous
Ferrocyanhydric
Ferri
Sulphurous
Hypophosphorous
Silicic
Selenic
Benzoic
Amido benzene sulphonic
Phthalic
Saccharinic

Chromic
Bichromic
Molybdic
Tungstomolybdic
Stannic
Phosphomolybdic
Vanadic
Silicotungstic
Aluminates
Aluminoferrates
Oxyphosphates
Thiocarbonates
Telluric acid
Zirconic
Ferrates
Silicates
Manganates + Permanganates
Chlorates + Perchlorates
Iodic
Periodic
Molybdates
Tantalates
Cyanides
Ferrocyanides
Ferricyanides
Cobalticyanides
Boric
Borotetramolic

Metaphosphoric
Phosphorus pentoxide
Fluoboric
Carbonic
Thiocarbonic
Nitroprussides
Periodates
Methiocyanic
Nitrites
Picric
Thiosulphates
Selenite
Iodine
Sulphobenzoic
Hyposulphites

[ITEM FOUND IN BOOK]

See if any Aluminum Salt will coat a nickel strip with a film & then transfer to Na Bi Carb using two nickel strips one of which has its film from the Aluminum Salt

Try in Cu Sulphate Solution Nickel a 1/4 inch wide & 12" Centimeter & alternate thru to see if it will unbalance the waves sufficient to work the Gurnsey phone

In Reg Al Rudolf - Na Bi Carb
See if can get thru on 3 grams di Oth
Change the current etc.

[ITEM FOUND IN BOOK]

Try Lead Electrode, with surface spongy. ~~and~~ Same as plante forming process. Need only a 1/1000 of an inch of it.

Try ~~Bi~~ Cerb Na + also phos

Try one of our iron pockets, Changed —

~~[illegible]~~

Try Silver Electrode with finely coating peroxide Ag formed by Electrolysis —

Test this principle of having the surface of deformed metal finely divided ~~[illegible]~~